

ciling the discrepancies of the curve which represents this inequality for different places; discrepancies which have hitherto been a source of much perplexity. These differences in the semimensual inequality are shown by the author to be consequences of peculiar local circumstances, such as the particular form of the coast, the distance which the tide wave has travelled over, and the meeting of tides proceeding in different directions; and he traces the influence of each of these several causes in producing these differences. A diurnal difference in the height of the tides manifests itself with remarkable constancy along a large portion of the coast under consideration. The tide hour appears to vary rapidly in rounding the main promontories of the coast, and very slowly in passing along the shores of the intervening bays; so that the cotidal lines are brought close together in the former cases, and, in the latter, run along nearly parallel to the shore; circumstances which will also account for comparative differences of level, and of corresponding velocities in the tide stream. The author intends to prosecute the subject when the whole of the returns of these observations shall have undergone reduction.

A paper was also read, entitled, "Copies of Registers of the Thermometer kept at Alford, Aberdeenshire." By the Rev. James Farquharson, F.R.S.

The observations recorded in these tables were made at 9^h 15^m A.M., and at 8^h 30^m P.M., each day of the year 1833; and the highest and lowest temperatures in each month observed from the indications of Six's thermometer. The author remarks that the differences between the temperature of the morning and evening hours of observation were greatest, on an average, during clear weather; that is, when the radiation of heat from the ground is greatest.

The reading of another paper, by the same author, entitled "On the Ice, formed under peculiar circumstances, at the bottom of running Water," was commenced, but not concluded.

SIR BENJAMIN COLLINS BRODIE, Bart., Vice-President, in the Chair.

The reading of a paper entitled, "On the Ice, formed under peculiar circumstances, at the bottom of running Water." By the Rev. James Farquharson, of Alford, F.R.S., was resumed and concluded.

The ice, which is frequently observed to collect at the bottom of streams and rivers, differs in appearance from that which is formed at the surface; for, instead of assuming the shape of solid glass-like plates, it has more the appearance of aggregated masses of snow, and is composed of small crystals of ice adhering together irregularly, either by their sides or angles. Rivers are sometimes so choked up by accumulations of ground-ice of this description, that they are not only impeded in their course, but also raised considerably above their banks. While in this state, a slight change in the weather will frequently occasion the complete disengagement of this ice from the bottom; so that, in a very short space of time, the river returns into its natural channel;